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ABSTRACT

Since engineering graduates and other technical students are frequently expected to document their projects as well as present such material orally, a Speech and Technical Writing course was designed at a New Hampshire college to prepare students for both technical writing tasks and oral presentations of their material. The course provides an overview of the concept of communication and focuses on the importance of purpose, audience, organization and format in both writing and speaking. Instructional objectives include preparing the student: (1) to align the writing/speaking assignment with these concepts; (2) to tailor content level and organization to readers' and listeners' needs; (3) to compose a letter of introduction and a resume; (4) to select the format and layout most appropriate to writing purpose; (5) to select appropriate speech formats and visual aids; (6) to write process descriptions, physical descriptions, and definitions appropriate to audience level; (7) to deliver an introductory speech, demonstration and visually aided presentation; (8) to use an overhead projector; (9) to select appropriate graphics to support text and oral presentation; and (10) to produce and present a report incorporating these skills. This document includes a sample 15-week outline, and a description of recommended texts with an explanation of suggested assignments and their sequencing.) (JG)

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"Speech and Technical Writing: A Combined Approach"

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CS 505693

Speech and Technical Writing: A Combined Approach

When already-employed students are asked what motivated them to enroll in my technical writing workshop, the same answer keeps coming up: "I can do the engineering all right; but its the writing I need help with." It seems that once the technical part of a job has been completed, the dreaded documentation must begin. This writing can take a variety of formats ranging anywhere from a short memo to a full-blown report.

After conceding that they never expected their jobs to require so much writing, the students usually go one further and cite another unanticipated job requirement for which they feel equally unprepared: giving presentations, particularly on the material they've just written.

Colleges currently offer courses which meet these needs, courses the students might have taken in their degree programs: technical writing and public speaking. However, at best, only one of these two courses is a technical degree requirement. Consequently, students who do wish to enroll in either technical writing and/or speech must use these classes as one or two of their precious few free electives. Enrollments indicate a reluctance to do so. Students tend rather to use electives to pick up technical courses outside their major to broaden their backgrounds and increase their job prospects.

If one of our goals in education is to properly prepare our students for the job market, it would seem we would be doing them a service by offering one three-credit course which not only addresses itself to the technical writing tasks the future job

holder is likely to face, but also to the oral presentation of that material. The course could combine a streamlined version of a technical writing course with a modification of the traditional speech class, thus tailoring it to meet specific job needs.

The concept of combining speech and technical writing is not completely new as a course entitled "Technical Writing and Speech" is successfully in place at the University of New Hampshire and is a requirement in some of their technical degree programs. But the idea of combining speech and technical writing is not receiving extensive exposure, and it should warrant consideration.

What follows here is an interpretation of a combined speech and technical writing course including a course description, instructional objectives, a possible fifteen-week outline, recommended texts, and an explanation of and rationale for suggested assignments and their sequencing.

Course Description

Speech and Technical Writing is a 3-credit course providing theory and practice in effective technical writing and oral presentations. The course will provide an overview of the concept of communication and will focus on the importance of purpose, audience, organization and format in both writing and speaking. Short written and oral assignments addressing each of these areas will lead to a comprehensive final report and oral presentation.

Instructional Objectives

After participating in the course, the students will be able to:

- Place technical writing and public or presentational speaking within the framework of a communication theory,
- Provide a rationale for clarity and conciseness in writing and oral communication,
- Determine purpose and audience in writing and speaking,
- Tailor content level and organization to readers' and listeners' needs,
- Compose a letter of introduction and resume,
- Select the format and layout most appropriate to writing purpose,
- Select appropriate speech formats and visual aids,
- Write process descriptions, physical descriptions, and definitions appropriate to audience's level,
- Deliver an introductory speech, demonstration, and visually-aided presentation,
- Use an overhead projector,
- Select appropriate graphics to support text and oral presentation,
- Produce and present a report which incorporates skills learned in class.

Course Outline for a Fifteen-Week Period

Week #	Areas of Concentration
1	Communication Model Interference in Communication
2	Audience Types Audience Assessment and Negotiation Public Speaking Guidelines
3	Letter of Application Resume
4	Introductory Speeches
5	Purpose and Audience Worksheet Definitions Tailored to Audience
6	Speech Organization Patterns Speech to Inform
7	Process Descriptions Handling Props Nervousness
8	Demonstration Speeches
9	Writing Descriptions Technical and Lay Descriptions
10	Illustrations
11	Graphs Non-verbal Communication
12	Graphics Presentation Using Overhead Projector
13	Layout and Organization Written and Oral
14	Final Report Presentations
15	Final Report Presentations

Recommended Texts

Houp, Kenneth W. and Thomas E. Pearsall. Reporting Technical Information, Fifth Edition. New York: MacMillan Publishing Company, 1984.

Zimmerman, Gordon I. Public Speaking Today. St. Paul: West Publishing Company, 1979.

Suggested Assignments and Their Sequencing

An appropriate starting point for a course concentrating in speech and technical writing is with an overview of the communication process itself. Wilbur Schramm has provided models representing the communication process in his selection "How Communication Works" in The Process and Effects of Mass Communication, pp. 4-8. A discussion of the ostensible goal of the writer and speaker, to share meaning, and an examination of places where the communication process may break down, where "noise" may interfere, whether in writing or in speaking, will help establish the need for clarity in all communications. The first chapter of Public Speaking Today would also be helpful here. This discussion establishes the base on which all further assignments in the course are built, for they are all designed to minimize the chance of communication breakdowns and enhance the possibility of sharing meaning.

In the second week of the course, the need to tailor information to fit the audience would be explored. A discussion of potential audiences and an estimation of their approximate level of technical knowledge will be shown to be crucial to the pre-writing and pre-speech processes. At this time, the many variables which a speaker may control or account for before speech preparation

could be considered. These discussions of material-shaping influences would be followed by an examination of guidelines speakers should consider regarding their own appearances and their preparation for the speaking assignment. Chapters 1, 2, and 3 in Reporting Technical Information and Chapters 2 and 8 in Public Speaking Today support the second week's material.

The third and fourth weeks of the course would allow the students to apply the preceding weeks' theory to their own lives. Two writing tasks and one speaking assignment could be the vehicles. Because the letter of application hypothetically initiates the job search, the students would be asked to select an advertisement for a position in their field and prepare a letter of application and an updated resume. Supporting information needed for these written assignments can be found in Chapter 13 in the Houp and Pearsall text.

A successful letter of application is likely to generate an interview appointment. In the interview, the presentation or selling of self begins. As a clear sense of what to say and how to present that material is critical here, a speech which simulates the job interview would be assigned. Students would be asked to introduce themselves to the class, identify the position they seek, and present their job qualifications. The class collectively plays the role of interviewer and may question the "job applicant." Feedback on the effectiveness of the introductory speech would be given orally by the class and in writing by the instructor.

The fifth week of the course would further reinforce the concept of audience while considering the role of purpose in communication. The first of two writing assignments, preparing a report worksheet, is patterned after Houp and Pearsall's Chapter 2 exercise (p. 18). The worksheet provides the students with a concrete plan for any writing assignment as it requires the writer to identify the target reader, use specific statements to frame the purpose for writing, establish the writer's role, list the appropriate supporting materials, and establish a preliminary organization plan.

The second writing assignment involves a task at the heart of technical writing: writing definitions. In a Technical Writing seminar, held in August, 1984, Pearsall vividly established the importance of this task when he referred to definitions as "the building blocks of technical writing." To underscore the need for clear, concise definitions, it would be advisable to establish the premise that meaning is shared when items, concepts, or theories are described in such a way that only one possible meaning can result before the students practice writing definitions. This assignment asks students to compose definitions for an item or concept in their field, varying the degree of technicality to suit both lay and expert audiences. Chapter 6 in Houp and Pearsall provides instruction on writing definitions.

The oral counterpart to writing definitions might be labelled "speaking to inform." In the sixth week of the course, an oral presentation of the written definitions would be assigned. To perform this presentation effectively, students would need to understand and select organization patterns and delivery strategies

most suited to their audience, purpose and material. The Zimmerman text offers relevant discussions of speech organization in Chapters 3 and 4, speech strategy in Chapter 5 and speaking to inform in Chapter 9. The Houp and Pearsall text addresses organization plans in writing in Chapter 8 and would provide supplementary support here.

In the seventh and eighth weeks of the course, the already established skills could be built on by increasing the degree of difficulty of the writing and speaking assignments. In their jobs, professionals are frequently called upon to document or describe the workings of something they know very well. In this situation, a paradox of information may result: the professionals may know their topic so thoroughly they have difficulty remembering what the reader or audience does not know. In order to describe a process, key ideas and their proper sequencing must be identified and then presented using a logical organization plan. To provide practice for this likely job requirement, students would be asked to write a process description appropriate to their field for a lay audience. Chapter 14 in Reporting Technical Information supplies comprehensive coverage of process descriptions.

Similarly, a typical job requirement in business and industry is the demonstration of a process. In the eighth week of the course, the process description just written could become the material for an in-class demonstration. A demonstration would require the students to add physical manipulation to their oral presentational skills. To prepare them for this assignment,

guidelines for the handling of visual aids and suggestions for dealing with nervousness should be considered. Chapters 6 and 7 in Public Speaking Today contain helpful material on using audiovisual aids and on managing nervousness.

In addition to writing process descriptions, there are many situations on the job which call for accurate physical descriptions: a part may need to be built to specifications, or the projected appearance of an item being designed may need to be conveyed before the prototype can be built. Writing a comprehensive physical description, a technical writing skill which again builds on those already introduced, would be handled in the course's ninth week. The students would be asked to describe a concrete object appropriate to their fields. As with all the technical writing, the successful description must be tailored to targeted audiences, language must be exact, and a logical organization plan must be followed. Houp and Pearsall discuss descriptive writing in Chapter 7.

Definitions and descriptions require a skillful handling of language; but regardless how meticulous the writing may be, there are instances where a picture or a graphic make a point clearer, reinforce an idea, or cause the material to have a greater impact. In the tenth week of the course, attention would be focused on producing illustrations to support the definitions or descriptions already written. The importance of appearance and the recognition of the negative impact a sloppily prepared or improperly used graphic may have could be stressed. A follow-up presentation of

guidelines for illustrations, proper labelling of the graphic, its key points and the view, if appropriate, would precede a workshop on drawing illustrations. Effective use of graphics, the concept that illustrations should play a supporting role and should clarify or reinforce rather than dominate, would be included in the discussion at this point.

Another visual element important to technical writing and reports is the presentation of raw data, measurements, survey results, test findings, polls and other statistical material. The eleventh week of the course would first examine theory behind the handling and placement of charts and graphs within the report. Several principles would need to be established: that numerical facts do not have meaning by themselves, that they must be analyzed or explained or related to other items or interpreted before they have significance; that just what the numbers mean can be manipulated by the writer's presentation; and that the type graph selected affects interpretation as much as material contained within the graph. In addition to this concern with technical accuracy and representation, impact of the visual appeal of the graph must be taken into account. Discussion of unity, balance, contrast and meaning is appropriate here. In Chapter 2 of <u>How to Prepare Charts and Graphs for Effective Reports</u>, Robert Lefferts considers these principles in detail, as do Houp and Pearsall in Chapter 12.

To apply the theory behind good graphics, students would be asked to bring in some raw data relating to the item they've

defined or described or concerning their field in general. They would then be asked to select a point or two their statistics would support and represent it in an appropriate graphic. The successful graphic would not only be accurate, it would be named, have proper labels, and display unity, balance, contrast and meaning.

At this time in the course, a correlation could be made between the psychological effect of graphics on the reader and the psychological effect non-verbal communication can have on the listener. A discussion of the messages a speaker may be inadvertently sending would allow students to examine and modify their own speaking habits. This consideration of kinesics and proxemics would acquaint students with communication influences extending beyond language. The awareness of the effect of the physical set-up of a room and the speaker's positioning there might give the speaker more control over the environment, again increasing the possibility of sharing meaning. Zimmerman considers many of these ideas in Chapters 1 and 11.

The material and theory covered in the tenth and eleventh weeks could be put to use in the twelfth week in preparing for another typical job situation. In business and industry, the overhead projector is used extensively in presentations. Because outside technical support is not always available, presenters are often left to their own devices for preparing their material. Familiarizing students with the preparation of transparencies or view graphs and the use of the overhead projector would be appropriate. Students would be asked to transfer one of their illustrations, graphs or charts onto a transparency and deliver a presentation incorporating that material. This assignment would

provide practice with speaking while having to operate the overhead projector and point to areas on the graph, without losing contact with the audience. Chapter 19 in Houp and Pearsall instructs in using the overhead projector.

With many of the various components of the technical report already composed and several speaking skills practiced, a closure process would begin in the thirteenth week of the course. The layout and organization of a final report comprised of the written course work and the preparation for the delivery of a final presentation would be considered. Once again, purpose and audience would be guideposts for the report's and presentation's assembly. In selecting layout and an organization plan, the students would have to determine who will be reading the report, for what reason, and what that reader expects to see. Compartmentalizing the writing to suit the readers' needs, using previews, labelling all sections, and numbering graphs and illustrations properly would be report requirements. Additionally, the students would need to prepare prefatory elements such as cover and title pages, a table of contents and list of illustrations and such supplementary elements as appendixes and documentation. Chapters 8 through 11 in the Houp and Pearsall text are an invaluable resource in this stage of the writing.

The assembled report would be the springboard for a final oral presentation. As they gathered their writing components for their final report, the students would be incorporating all their speaking skills for the final presentation. The type of presentation

given would vary to suit the content of each student's report and would be discussed beforehand. The students might then choose to use visual aids, demonstrations and/or the overhead to enhance their deliveries.

Presenting the same material in both written and oral formats, the subject matter for the fourteenth and fifteenth weeks of the course, should reinforce finally the course premise: that shared meaning is more likely to occur when speakers and writers let their messages be shaped and influenced by purpose and audience while they exercise control over whatever variables they can in order to reduce the chances of noise or breakdowns in the communication process.

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